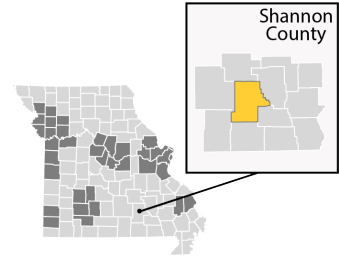


Shannon County, Missouri

Broadband Expansion Economic Benefit Analysis

Shannon County is in the southeastern Ozarks region of Missouri. Just over 58% of county locations have fixed broadband service. Shannon County’s 2022 population totaled 7,193 people, ranking it 101st in Missouri for population.



Two 10-year expansion scenarios estimate the benefits to Shannon County if it increased broadband adoption by 10 (minimum) and 30 (maximum) percentage points. Exhibit S1 shows the number and percent of households assumed to have broadband by year 10. Exhibit S2 shows the total benefit model inputs for each scenario.

Exhibit S1. 10-Year Fixed Broadband Household Adoption Scenarios

Characteristic	Base Value	Minimum Scenario	Maximum Scenario
Households without Fixed Broadband Service	1,145	870	319
Households with Fixed Broadband Service	1,608	1,883	2,434
Percent of Households with Fixed Broadband Service	58.4%	68.4%	88.4%

Source: FCC 2024 serviceable location data used as proxy for household base adoption levels.

Exhibit S2. 10-Year Economic Benefit Direct Model Inputs

Basic Assumptions	Minimum Scenario	Maximum Scenario
Percent of Households that Adopted Broadband by Year 10	68.4%	88.4%
Broadband Installation Investment to Serve Remaining Households	\$22,981,391	\$22,981,391
Telemedicine Benefits		
Patient Savings from Reduced Use of Emergency Departments	\$1,149,445	\$3,448,335
Patient Savings from Initial Health Consultation via Internet	\$495,234	\$1,485,702
Patient Transportation Savings due to Telemedicine	\$30,617	\$91,851
Missed Work Income Savings to Patient	\$26,566	\$79,698
Education Productivity Benefits		
K12 Teacher Productivity Savings	\$385,894	\$385,894
Income and Employment Benefits		
Household Income Increases	\$325,135	\$1,953,840
Farm Income Changes	\$60,531	\$181,594
Annual Average Direct Employment Increases by Year 10	55	110

Notes: See appendix section for additional methodology details. Dollar values represent 10-year benefit in nominal figures.

Shannon County 10-Year Broadband Expansion Benefit Results

Benefits arise from both fixed broadband infrastructure construction and broadband adoption. Construction investment benefits start in year one and household adoption benefits begin in year two. Temporary construction activity, and associated jobs, conclude in year five. In each scenario, new jobs, labor income and GDP include the total impact of direct inputs (from Exhibit S2) and indirect purchases, such as new local spending in the county spurred by those inputs.

Minimum Scenario: 10 Percentage Point Gain in Fixed Broadband Adoption over 10 Years

In the minimum scenario, the annual average increase of 68 jobs is realized in year 10. On average, annual employment is 2.1% higher than 2022 county employment. This scenario annually adds 1.3% and 1.0%, respectively, on average to county labor income and GDP compared with 2022 levels.

Exhibit S3. Minimum Scenario – Total Economic Benefits by Year

Characteristic	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10	10-Year Total*	Avg. Annual Change**
New Annual Average Employment	16	72	99	109	119	38	46	53	60	68	68	2.1%
New Labor Income (in millions)	\$0.2	\$1.0	\$1.4	\$1.6	\$1.9	\$1.0	\$1.2	\$1.4	\$1.6	\$1.8	\$13.2	1.3%
New GDP (in millions)	\$0.3	\$1.5	\$2.2	\$2.5	\$2.9	\$1.5	\$1.7	\$2.0	\$2.3	\$2.6	\$19.5	1.0%

Notes: All income and GDP figures in 2024 dollars. *Total employment is for year 10 as jobs are not cumulative, and other figures are cumulative totals. **Average annual change compared to 2022 county employment, income and GDP totals.

Maximum Scenario: 30 Percentage Point Gain in Fixed Broadband Adoption over 10 Years

In the maximum scenario, the annual average increase of 137 jobs is seen in year 10. On average, annual employment is 3.2% higher than 2022 county employment. Annually, this scenario adds 2.2% and 1.7%, respectively, on average to county labor income and GDP compared with 2022 levels.

Exhibit S4. Maximum Scenario – Total Economic Benefits by Year

Characteristic	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10	10-Year Total*	Avg. Annual Change**
New Annual Average Employment	16	80	114	133	151	77	92	107	122	137	137	3.2%
New Labor Income (in millions)	\$0.2	\$1.2	\$1.8	\$2.3	\$2.7	\$2.1	\$2.5	\$2.9	\$3.3	\$3.7	\$22.5	2.2%
New GDP (in millions)	\$0.3	\$1.8	\$2.8	\$3.4	\$4.1	\$2.9	\$3.5	\$4.1	\$4.6	\$5.2	\$32.8	1.7%

Notes: All income and GDP figures in 2024 dollars. *Total employment is for year 10 as jobs are not cumulative, and other figures are cumulative totals. **Average annual change compared to 2022 county employment, income and GDP totals.

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